APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): December 12, 2007

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: St. Louis District, St. Mary's Acute Care Center, MVS-2007-789-001-SNR_stream 1 and wetlands 1 and 2

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: Illinois County/parish/borough: Jefferson County City: Mount Vernon
Center coordinates of site (lat/long in degree decimal format): Lat. 38:29:67.94° **N**, Long. -88:94:02.39° **W**.
Universal Transverse Mercator: 16 North
Name of nearest waterbody: Casey Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Casey Fork
Name of watershed or Hydrologic Unit Code (HUC): Big Muddy (07140106)
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): November 28, 2007

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
      ☐ TNWs, including territorial seas
      ☐ Wetlands adjacent to TNWs
      ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
      ☒ Non-RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
      ☒ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
      ☐ Impoundments of jurisdictional waters
      ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters: 1,532 linear feet: 5 width (ft) and/or 0.18 acres.
      Wetlands: 0.09 acres in total.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**
      Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):** [3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain:.

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: **Pick List**
Drainage area: 175 **acres**
Average annual rainfall: 42.1 inches
Average annual snowfall: inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☒ Tributary flows through **2** tributaries before entering TNW.

Project waters are **2-5** river miles from TNW.
Project waters are **2-5** river miles from RPW.
Project waters are **2-5** aerial (straight) miles from TNW.
Project waters are **2-5** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: The unnamed non-RPW and its associated wetlands flow for approximately 3.54 river miles to Casey Fork. Approximately 1.22 miles downstream, the Casey Fork has been

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

determined to be a Traditional Navigable Water as it flows into a Rend Lake State Fish and Wildlife Area managed by the Illinois Department of Natural Resources. The management area contains the Casey Fork subimpoundment dam, which is utilized to produce flooded conditions in the portion of Casey Fork that flows through the State Fish and Wildlife Area. The Casey Fork is seasonally navigable when the state agency floods for waterfowl hunting in the winter. The Fish and Wildlife Area is managed with hunters and anglers in mind; and therefore, can draw a commerce connection to the interstate sale of hunting and fishing licenses. Additionally, there are approximately five public boat ramps and three other public access points. Further downstream, the Casey Fork flows into Rend Lake. Rend Lake measures approximately 18,900 acres in surface area, and is widely used as a public recreational attraction for the State of Illinois. Rend Lake is an impoundment of the Big Muddy River, which flows into the Mississippi River.

Generally, the midpoint of the non-RPW is approximately 4.76 river miles from the point of Casey Fork, which has been determined to be a Traditional Navigable Water by the St. Louis District. The St. Louis District has determined that Casey Fork is a TNW as it enters the State Fish and Wildlife Area (near "Lemon Hill").

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Tributary stream order, if known: .

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☒ Natural
☐ Artificial (man-made). Explain: .
☐ Manipulated (man-altered). Explain:.

Tributary properties with respect to top of bank (estimate):
Average width: 6 feet
Average depth: 3 feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):

☒ Silts	☒ Sands	☐ Concrete
☐ Cobbles	☒ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: The non- RPW (Stream 1) has undercut banks and sediment deposition, indicating occasional events of higher flow and subsequent erosion.
Presence of run/riffle/pool complexes. Explain: No riffle pool complexes were observed within the review area.
Tributary geometry: **Meandering**
Tributary gradient (approximate average slope): 2 %

(c) Flow:
Tributary provides for: **Intermittent but not seasonal flow**
Estimate average number of flow events in review area/year: **6-10**
Describe flow regime: Stream carries stormwater following precipitation events, but also appears to be influenced by groundwater as water was observed within the bottom of the channel in several locations several days following a rain event.

Other information on duration and volume: .

Surface flow is: **Discrete and confined.** Characteristics: The channel did not appear to be routinely subjected to flooding. Site visit was conducted > 3 days following a rain event, and there were some locations of intermittent pooling.

Subsurface flow: **Unknown**. Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☒ Bed and banks
☒ OHWM[5] (check all indicators that apply):

☒ clear, natural line impressed on the bank	☒ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☒ leaf litter disturbed or washed away	☒ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☐ water staining	☒ abrupt change in plant community

[5]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

☐ other (list):
☐ Discontinuous OHWM.[6] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
☐ High Tide Line indicated by:
- ☐ oil or scum line along shore objects
- ☐ fine shell or debris deposits (foreshore)
- ☐ physical markings/characteristics
- ☐ tidal gauges
- ☐ other (list):

☐ Mean High Water Mark indicated by:
- ☐ survey to available datum;
- ☐ physical markings;
- ☐ vegetation lines/changes in vegetation types.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: Water clarity appeared to be clear. However, the stream channel flows along an existing medical facility and its associated parking. Although there were no observable pollutants, potential sources of pollution within the channel can include non-point source discharges from road runoff, as well as fertilizer and pesticide applications to lawns at the medical facility.

Identify specific pollutants, if known: None observed.

(iv) Biological Characteristics. Channel supports (check all that apply):

☒ Riparian corridor. Characteristics (type, average width): Stream channel is enveloped by a forested corridor for its duration within the proposed alignment. Overstory species composition included *Gleditsia triacanthos*, *Prunus serotina*, *Elymus virginicus*, *Quercus imbricaria*, and *Quercus palustris.* .

☐ Wetland fringe. Characteristics:.

☐ Habitat for:
- ☐ Federally Listed species. Explain findings: .
- ☐ Fish/spawn areas. Explain findings: .
- ☐ Other environmentally-sensitive species. Explain findings: .
- ☒ Aquatic/wildlife diversity. Explain findings: Riparian corridor provides cover and food source for surrounding wildlife. Additionally, forest corridor provides shading to the stream channel, allowing the water temperatures to maintain cooler temperatures. .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: 0.9 acres

Wetland type. Explain: The wetlands were mostly considered to be emergent due to the presence of Phragmites australis, Typha latifolia. Some Salix nigra were present. However, the dominant cover was herbaceous vegetation.

Wetland quality. Explain: The quality was not considered to be high quality due to the dominance of Phragmites. The wetlands were highly influenced by the presence of the medical facilities parking structure.

Project wetlands cross or serve as state boundaries. Explain:.

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow**. Explain:

Surface flow is**: Discrete**

Characteristics: Both of the emergent wetlands were observed to directly abut Stream 1. The upstream wetland, Wetland A, physically surrounds Stream 1 as it flows through the wetland. The downstream wetland, Wetland B, receives stormwater runoff from a storm drain. The stormwater flows along the length of the parking lot, through the wetland, and eventually reaches Stream 1. There are wetland conditions at the outfall of the storm drain, all of the way to Stream 1.

Subsurface flow: **Unknown**. Explain findings: .

☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

☒ Directly abutting

☐ Not directly abutting
- ☒ Discrete wetland hydrologic connection. Explain:.
- ☐ Ecological connection. Explain: .
- ☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **2-5** river miles from TNW.

[6]Ibid.

Project waters are **2-5** aerial (straight) miles from TNW.
Flow is from: **Wetland to navigable waters.**
Estimate approximate location of wetland as within the **50 - 100-year** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain:

Identify specific pollutants, if known: No specific pollutants observed. However, potential sources of pollution within the urbanized setting include non-point source discharges from fertilizer and pesticide applications to on-site lawns .

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(iii) Biological Characteristics. Wetland supports (check all that apply):

- ☐ Riparian buffer. Characteristics (type, average width): .
- ☒ Vegetation type/percent cover. Explain: Emergent habitat consisting of mostly *Phragmites australis*.
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☒ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **2**
Approximately (0.09) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)
Wetland 1 - Yes	0.02 acres		
Wetland 2 - Yes	0.07 acres		

Summarize overall biological, chemical and physical functions being performed: Wetlands 1 and 2 are positioned so that they directly abut segments of the non-RPW (Stream 1) that flows through the property. The discrete path of the water course flows along the small, emergent wetlands (dominated by Phragmites australis, Salix nigra, and Typha latifolia). However, both wetland's hydrology is mostly supplied through overland flow from the adjacent parking lot associated with the medical facility. Stormwater is channeled off of the parking area and into these wetlands. However, it is likely that there is additional hydrologic support through surface flow hydrology from Stream 1 and groundwater exchange.

The presence of Wetlands 1 and 2 physically affects the downstream conditions of Stream 1 through intercepting stormwater runnoff received from the on-site parking lot. The thick stand of Phragmites, its leaf litter, and other organic materials slow the flow of water, causing water to disperse throughout the wetland area. As water transport becomes temporarily slowed, opportunities for natural losses to the hydrologic cycle present itself (i.e., plant uptake, evapotransporation, evaporation, and groundwater infiltration). Therefore, stormwater leaving the pavement and directed to the non-RPW is anticipated to be slowed through the interception of these wetlands. As a result of slower water velocities and losses through the hydrologic cycle, erosion potential is anticipated to be minimized. Overall, the interception of hydrology physically benefits the downstream segment of stream 1, subsequently slowing the velocity of water that proceeds on to Casey Fork.

Wetlands 1 and 2 have the potential to help ameliorate the affect of adjacent medical facility and its associated infrastructure (i.e., parking lot and access roadways) on the water quality of the non-RPW, Casey Fork, and Rend Lake. Wetlands have long been termed the "kidneys of the landscape", due to their capacity to assist with pollutant filtration and retention. Within the Casey Fork watershed, several opportunities exist for non-point source pollutants to enter the waterways (i.e., waste from domestic animals, pesticide, and fertilizer applications). Wetlands have been documented as having the capability of providing a long-term sink for these types of nutrients, primarily through their biogeochemical cycling (Walbridge and Lockaby 1994, Axt and Walbridge 1999). Specifically, wetlands that have developed within mineral soils, such as the ones observed, may even possess a greater capacity to assist with nutrient and pollutant retention due to a large source of binding cations (Richardson 1985).

In general, it has been documented that species richness and primary productivity are very high within wetlands that maintain open flow systems with regular pulsing hydroperiods. It is thought that flowing water can be a stimulus to plant productivity, likely caused by their ability to continually provide a renewable source of mineral input (Mitsch and Gosselink 2000). Flooding also can temporarily induce anaerobic conditions, converting some micronutrients (i.e, Fe and Mn) into a form more readily available for plant uptake. Generally, greater plant productivity can result in a wider variety of other living organisms that utilize these wetland systems and can be found within the riparian area of streams. Greater production of plant biomass can typically convert to a more abundant food supply for local wildlife. Also, when water may become sparsely available, water is made available to animals

through the moist hydrophytic vegetation or within shallow wetland pools. It is likely that many of the local wildlife species are highly dependent upon these wetlands for sustainability

LITERATURE CITED

Axt, J.R., and M.R. Walbridge. 1999. Phosphate removal capacity of palustrine forested wetlands and ajacent uplands in Virginia. Soil Science Society of American Journal 63:1019-1031.

Mitsch, W.J. and J.G. Gosselink. 2000. Wetlands. John Wiley and Sons, Inc. New York, New York.

Walbridge, M.R. and B.G. Lockaby. 1994. Effects of forest management on biogeochemical functions in southern forested wetlands. Wetlands 14:10-17.

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: The unnamed, non-Relatively Permanent Flow Water (non-RPW) possesses features of an intermittent tributary with an ordinary high water mark (OHW). The non-RPW averages approximately 4 feet at the bed width and approximately 6 feet for the bank height. Features observed supporting clear evidence of flow and an OHW throughout the entire channel include: sediment deposition, scour, and a clear line impressed on the bank. Based on observed characteristics and its location within the 175 acre watershed, the unnamed tributary indicates second order stream hydrology. The stream channel flows through a 0.02- acre emergent wetland (Wetland 1) and a 0.07-acre emergent wetland (Wetland 2). Generally, there is no interruption of flow or hydrologic connectivity between the tributary, its wetlands, and Casey Fork. Based on observed conditions, the unnamed tributary has the capacity to carry surface flow hydrology via a discrete and confined channel to Casey Fork. It has been determined that the non-RPW maintains hydrologic connectivity to the section of Casey Fork that has been determined by the St. Louis District to be a TNW. Hydrologic connectivity refers to the flow that transports organic matter and nutrients, energy, and aquatic organisms throughout the system (Freeman et al., 2006). The following outlines how the non RPW and its associated wetlands maintain a significant nexus to Casey Fork and Rend Lake through its hydrologic connectivity.

The unnamed RPW and in-stream wetlands influence the chemistry of Casey Fork through its transport of sediments and nutrients and geochemical cycling. Rainfall within this area provides a frequent pulse of hydrology, thus providing a source of hydrology to the non-RPW and wetland. It is anticipated that the wetlands greatly influence the chemical make up of non-RPW, through their capabilities to temporarily slow the flow of water, transform mineral elements, and retain pollutants. Although specific pollutants were not observed within the wetland or channel, it is anticipated that the whole system is the recipient of non-point source pollutants such as fertilizers, pesticides, and roadway pollutants (i.e, oil, gasoline, etc.). Some nutrients and chemicals are likely transported downstream through the non-RPW. However, the on-site wetlands are positioned such that they can filter stormwater leaving the on-site parking lot. Wetlands have long been hypothesized as nutrient and pollutant sinks, anticipated to be filtrants through the removal nutrients and pollutants either through plant uptake or a long term adsorption and/or precipitation to other binding ions (see section B3). It is likely that the wetlands primary benefit to the non-RPW is their capability to filtrate pollutants.

The non-RPW's surrounding riparian area consisted of forested conditions, suggesting an continual source of organic input through interception of leaf litter and coarse woody debris. During the site visit, evidence of the following in-stream organic components were observed: leaves, woody debris, and leaf fragments. Organic material, such as described, is processed by a number of fungi, bacteria, and invertebrates. Leaves and other detrital material are processed by a feeding group referred to as "shredders", which can include larvae of craneflies, caddisflies, nymphs of stoneflies, and crayfish. Shredders break down coarse particulate matter, allowing the processed material to be utilized by a secondary group, commonly referred to as "collectors". Collectors then process the finer materials of organic matter, eventually contributing to the dissolved organic matter content and fine particulate matter content that continually flows downstream (Smith and Smith 2001). In general, as the coarse particulate organic matter and fine particulate organic matter is transferred downstream, invertebrate populations migrate with the material. The diversity of aquatic fauna in headwater streams contributes to the biodiversity of a river (Meyer et al. 2007), and as these "drifting" invertebrate populations are being transported downstream, they fit into the complex foodweb of Casey Fork and Rend Lake.

The non-RPW exits the property and flows on to Casey Fork, maintaining a hydrologic connection through an open and defined channel. It has been determined that Stream 1, Wetland 1, and Wetland 2 have more than an insubstantial or speculative effect on the physical, biologic, and chemical conditions of Casey Fork. Evidence of water flow was indicated through the presence of clear indicators of an OHW. Due to the hydrologic connection, the unnamed tributary has the capacity to contribute hydrology, retain pollutants within its wetlands, provide habitat for aquatic life cycles, and provide organic input to downstream waters. Based on these physical, biologic, and chemical connections, it has been determined that the non-RPW and its in-stream wetlands maintain a significant nexus to Casey Fork, and subsequently the portions of Casey Fork that have been considered as Traditional Navigable Water and Rend Lake.

LITERATURE CITED

Freeman, M.C., C.M. Pringle, and C. R. Jackson. 2007. Hydrologic Connectivity and the Contribution of Stream Headwaters to Ecological Integrity at Regional Scales. Journal of the American Water Resources Association 43:5-14.

Meyer, J.L., D.L. Strayer, J.B. Wallace, S.L. Eggert, G.S. Helfman, and N.E. Leonard. 2007. The Contribution of Headwater Streams to Biodiversity in River Networks. Journal of the American Water Resources Association. 43: 86-103.

2. Smith, R.L. and T.M. Smith. 2001. Ecology and Field Biology. Benjamin Cummings, New York, pp. 644-650 .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:.

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
- ☐ TNWs: linear feet width (ft), Or, acres.
- ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
- ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
- ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
- ☐ Tributary waters: linear feet width (ft).
- ☐ Other non-wetland waters: acres.
  Identify type(s) of waters: .

3. **Non-RPWs[7] that flow directly or indirectly into TNWs.**
- ☒ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
- ☒ Tributary waters: **1,532** linear feet **4-6** width (ft).
- ☐ Other non-wetland waters: acres.

[7]See Footnote # 3.

Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
   - ☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
     - ☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .
     - ☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

   Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
   - ☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

   Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands abutting to non-RPWs that flow directly or indirectly into TNWs.**
   - ☒ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.**[8]
   As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
   - ☐ Demonstrate that impoundment was created from "waters of the U.S.," or
   - ☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
   - ☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[9]

- ☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
- ☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
- ☐ which are or could be used for industrial purposes by industries in interstate commerce.
- ☐ Interstate isolated waters. Explain: .
- ☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):

- ☐ Tributary waters: linear feet width (ft).
- ☐ Other non-wetland waters: acres.
  - Identify type(s) of waters: .
- ☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

- ☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.

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[8] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

[9] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
  ☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  ☒ Office concurs with data sheets/delineation report.
  ☐ Office does not concur with data sheets/delineation report.
☒ Data sheets prepared by the Corps:.
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
  ☐ USGS NHD data.
  ☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: Mount Vernon Quad.
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Jefferson County, Illinois.
☒ National wetlands inventory map(s). Cite name: Mount Vernon Quad.
☐ State/Local wetland inventory map(s):.
☒ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):.
  or ☐ Other (Name & Date):.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☒ Other information (please specify):Field review November 28, 2007.

B. ADDITIONAL COMMENTS TO SUPPORT JD:.